



MANITOWOC PUBLIC UTILITIES

1303 South 8th Street P.O. Box 1090 Manitowoc, WI 54221-1090 920-683-4600 FAX 920-686-4348 www.mpu.org

Mr. Randy Matty, P.E.
Air Management Engineer
Wisconsin Department of Natural Resources
2984 Shawano Ave.
Green Bay, WI 54313-6727

July 28, 2014

Subject: Quarterly Excess Emission Report (second quarter 2014)

Dear Mr. Matty:

Enclosed please find the Quarterly Excess Emission Report for the Manitowoc Public Utilities Power Plant as required by permit conditions I.D.3.c.(4), I.D.4.c.(5), I.D.5.c.(3), I.E.2.c.(4), I.E.5.c.(3), and I.E.4.c.(3), of permit no.: 436035930-P22. This report is for the quarter ending June 30, 2014 for our facility located at 701 Columbus Street, Manitowoc, Wisconsin. The report includes: quarterly fuel sampling & analysis reports, continuous opacity monitoring system reports on S-10 & S-20, reports on our SO₂, NOx and CO monitoring systems on Boilers B28 and B09, quarterly audits performed on our opacity monitors and quarterly cylinder gas audits for the Part 60 and/or Part 75 analyzers on Boiler B28 and B09.

(a.) Below is the 12-month rolling average heat input to the diesel.

P28 Diesel Unit	
April	6 mmBtu
May	6 mmBtu
June	7 mmBtu
<u>Applicable Limit</u>	4,814 mmBtu/month
Compliance Status	In Compliance

RICE NESHAP ZZZZ requirements after May 3, 2013:	
Operate no more than 100 hrs/yr for maintenance and readiness testing, emergency demand response, and local system reliability per [63.6640(f)].	P28 operated 0.0 hours in 2014

(b.) Compliance activities for the second quarter of 2014 can be summarized as follows:

	<u>8-SO₂</u>	<u>8-NO_x</u>	<u>8-CO</u>	<u>9-SO₂</u>	<u>9-NO_x</u>	<u>9-CO</u>	<u>Opacity S20</u>	<u>Opacity S10</u>
Excess emissions (%)	0%	0%	0%	0%	0%	0%	0 %	0 %
Downtime (%)	0.43 %	0.43 %	0.47 %	0.35%	0.35%	0.47%	0.05 %	0.22 %

(c.) Below are the 12-month rolling average mass emissions from B09.

	B09 SO2 Tons	B09 NOx Tons
April	15.3 tons/month	3.07 tons/month
May	15.8 tons/month	3.15 tons/month
June	15.2 tons/month	3.01 tons/month
<u>Applicable Limits</u>	71.2 tons per month 51.02 tons per month	24.62 tons per month 23.33 tons per month
Compliance Status	In Compliance	In Compliance

(d.) Below are the weighted average monthly paper pellet data.

Month	Tons	% Moisture	% Ash	%Sulfur	%Chlorine	BTU Common
April	1,259.91	6.15	6.37	0.16	0.14	11,643
May	3,532.73	4.38	6.19	0.14	0.07	11,310
June	2,995.69	3.54	6.35	0.06	----	11,695

Note: All paper pellets were prepared and provided by Pellet America or Greenwood fuels and are classified by the WDNR as non-municipal solid waste.

(e.) Quarterly EPA ECMPS Monitoring Report Submissions.

Monitoring Location	Submission Type	Date Accepted
8 (S20)	QA QTR 1	07/24/2014
8 (S20)	EM QTR 1	07/25/2014
9	QA QTR 1	07/21/2014
9	EM QTR 1	07/24/2014

(f.) B10 emissions on a 12-month rolling average basis:

Month	B10	B10	B10	B10	B10
	Average PM 12-month (lb)	Average Nox 12-month (lb)	Average SO2 12-month (lb)	Average VOC 12-month (lb)	Average GHG 12-month (ton)
Limit	195	1086	16.7	153	1,492
Apr-14	7.1	39.8	0.6	5.1	56.2
May-14	6.6	36.7	0.5	4.8	51.9
Jun-14	6.3	35.2	0.5	4.6	49.8

(g.) B28 emissions on a 12-month rolling average basis:

Month	B8	B8	B8	B8	B8	B8	B8	B8 HI exclude bio.	S20 (B8)	S20 (B8)	S20 (B8)	S20 (B8) Organic Compds 12-month Total	Total B8 HI Rolling 12- month
	Average PM 12-month (ton)	Average PM10 12-month (ton)	Average PM2.5 12-month (ton)	Average CO 12-month (ton)	Average Pb 12-month (ton)	Average F 12-month (ton)	Average H2SO4 12-month (ton)	Average GHG 12-month (ton)	Arsenic 12-month mmBtu	Nox 12-month Total	SO2 12-month Total	[=] mmBtu	
Limit	1.383	1.383	0.94	35.5	1.70E-02	0.054	0.64	13,816.0	133,333	98.1	7.76	34.125	7.76
Apr-14	0.922	0.922	0.56	3.8	1.54E-04	0.023	0.16	8,489.2	29,168	0.36	3.55	8.667	0.08
May-14	0.938	0.938	0.58	3.7	1.59E-04	0.024	0.18	8,779.8	33,020	0.37	3.56	9.258	0.08
Jun-14	0.939	0.939	0.59	3.5	1.62E-04	0.024	0.18	8,895.9	34,318	0.38	3.58	9.408	0.08

(h.) B09 emissions on a 12-month rolling average basis:

Month	B9	B9	B9	B9	B9	B9	B9	B9	S10 (B9)
	Average PM 12-month (ton)	Average PM10 12-month (ton)	Average PM2.5 12-month (ton)	Average CO 12-month (ton)	Average Pb 12-month (ton)	Average F 12-month (ton)	Average H2SO4 12-month (ton)	Average GHG 12-month (ton)	Arsenic 12-month total
Limit	4.025	3.190	2.560	35.6	0.028	0.3380	0.99	42,289.0	27.40
Apr-14	0.901	0.901	0.652	1.10	5.69E-05	0.0360	0.134	13,115.2	4.84
May-14	0.925	0.925	0.675	1.14	5.88E-05	0.0372	0.139	13,566.5	5.01
Jun-14	0.854	0.854	0.645	1.15	5.63E-05	0.0356	0.133	12,955.4	4.79

Furthermore, with regards to Boiler B28 and B09, to the best of my knowledge, based on the information supplied to me:

- a) There were 0 boiler operating days for which pollutant or diluent data have not been obtained by an approved method for at least 18 hours of operation of the facility.
- b) The Fc factor for unit B28 ranged from 1,040 to 1,866 and unit B09 ranged from 1,040 to 1,842. The fuel combusted was an 80%/20% pet coke/coal blend either alone or in combination with paper pellets and/or charcoal on units 8 and 9.
- c) There were 0 times when hourly averages have been obtained based on manual sampling methods.
- d) There were 0 times when the pollutant concentration exceeded full span of the continuous monitoring system.
- e) There were 0 modifications to the continuous monitoring system which could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3 of 40 CFR part 60, Appendix B.
- f) There were 0 changes made in operation of the emissions control systems during any period of data unavailability.
- g) The required continuous monitoring system calibration, span, and drift checks or other periodic audits have been performed as specified.
- h) The data used to show compliance was obtained in accordance with approved methods and procedures of NR 440 and is representative of plant performance.
- i) The minimum data requirements have been met.
- j) Compliance with the standards has been achieved during the reporting period except as specified in the enclosed reports.

If you have any questions concerning this report please call me at (920) 686-4211.

Sincerely,



Jerry Ahlsweide
Energy Supply and Production Supervisor

Cc: Red Jones – MPU, Tom Reed – MPU, Tim Harding – MPU, Scott Karbon – MPU

Enclosure

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, WI 53707

FUEL SAMPLING & ANALYSIS REPORT

Form 4500-134

4-94

Date Received By DNR

PART I. FACILITY INFORMATION

Name of Company / FID	Manitowoc Public Utilities / 436035930	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2014
Address	701 Columbus Street	Limit None
City, State, Zip Code	Manitowoc, WI 54220	Test Frequency Required <input type="checkbox"/> PER SHIPMENT
Stack/Process	S20 / B28	<input type="checkbox"/> DAILY <input checked="" type="checkbox"/> WEEKLY <input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY

PART II. EXCESS EMISSIONS (EE)

A. Total Fuel Quantity Used as Fired <input checked="" type="checkbox"/> tons fuel <input type="checkbox"/> 1000 gallons oil	10,876.9
B. Weighted Average Percent Ash as Fired	4.51
C. Weighted Average Percent Sulfur as Fired	1.94
D. Weighted Average Heat Content as Fired <input type="checkbox"/> BTU/pound fuel <input type="checkbox"/> BTU/gallon oil	11,933
E. Weighted Average Sulfur Dioxide as Fired (pounds SO2/mmBtu) (UNCONTROLLED)	3.26
F. Number of Possible Sample Periods In Qtr. (92,91,90,13,3,1, per shipment)	11
G. Number of Actual Samples Performed Per Quarter	11
H. Number of Samples Over Limit	0
I. Percent Unavailability of Samples ¹	0
J. Percent Excess Emission ²	0

¹ (F-G)/F x 100

Fuel is a blend consisting of petroleum coke and/or coal

² (H/G) x 100

plus paper pellets and charcoal.

**If the total duration of excess emissions is greater than 1% or the total percent unavailability is greater than 5%, then both this Fuel Sampling & Analysis Summary and the Complete Fuel Sampling and Analysis Report shall be submitted. If both conditions are satisfied, then only this Fuel Sampling and Analysis Summary and the results of any fuel audits performed shall be submitted. Additional information may be requested by the Department.

I certify that the information contained in this report is true, accurate, and complete.

Signature <i>Jerry Ahlsweide</i>	Title Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Telephone Number (incl. Area code) (920) 686-4211	Date Signed <i>7-28-2014</i>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation:

DNR Reviewer _____

Date Reviewed _____

Comments:

State of Wisconsin
 Department of Natural Resources
 Box 7921
 Madison, WI 53707

FUEL SAMPLING & ANALYSIS REPORT

Form 4500-134

4-94

Date Received By DNR

PART I. FACILITY INFORMATION

Name of Company / FID	Manitowoc Public Utilities / 436035930	<input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2014
Address	701 Columbus Street	Limit <u>None</u>
City, State, Zip Code	Manitowoc, WI 54220	Test Frequency Required <input type="checkbox"/> PER SHIPMENT
Stack/Process	S10 / B09	<input type="checkbox"/> DAILY <input checked="" type="checkbox"/> WEEKLY <input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY

PART II. EXCESS EMISSIONS (EE)

A. Total Fuel Quantity Used as Fired	<input checked="" type="checkbox"/> tons fuel <input type="checkbox"/> 1000 gallons oil	11,902.1
B. Weighted Average Percent Ash as Fired		2.74
C. Weighted Average Percent Sulfur as Fired		3.97
D. Weighted Average Heat Content as Fired	<input type="checkbox"/> BTU/pound fuel <input checked="" type="checkbox"/> BTU/gallon oil	12,979
E. Weighted Average Sulfur Dioxide as Fired (pounds SO ₂ /mmBtu) (UNCONTROLLED)		6.11
F. Number of Possible Sample Periods In Qtr. (92,91,90,13,3,1, per shipment)		7
G. Number of Actual Samples Per Quarter		7
H. Number of Samples Over Limit		0
I. Percent Unavailability of Samples ¹		0
J. Percent Excess Emission ²		0

¹ (F-G)/F x 100

Fuel is a blend consisting of petroleum coke and/or coal

² (H/G) x 100

plus paper pellets and charcoal.

**If the total duration of excess emissions is greater than 1% or the total percent unavailability is greater than 5%, then both this Fuel Sampling & Analysis Summary and the Complete Fuel Sampling and Analysis Report shall be submitted. If both conditions are satisfied, then only this Fuel Sampling and Analysis Summary and the results of any fuel audits performed shall be submitted. Additional information may be requested by the Department.

I certify that the information contained in this report is true, accurate, and complete.

Signature <i>Jerry A Ahlsweide</i>	Title Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Telephone Number (incl. Area code) (920) 686-4211	Date Signed <i>7-28-2014</i>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation:	DNR Reviewer _____
	Date Reviewed _____
Comments:	

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Note: Completion of this form is required
pursuant to chapter NR 439, Wis. Adm. Code

Excess Emission Report - Opacity

Form 4500-125 (R 5/09)

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company 436035930 / Manitowoc Public Utilities

1 2 3 4 QTR. 2014

Address 701 Columbus Street
Manitowoc, WI 54220

Cert./CEA 06-20-2014 (date)

Manufacturer/Model Number
United Science Inc. Model No. 550

Stack/Process
S10 / P28, B09

Emission Limit 20%
Total Source Operating Time in Quarter 65,585 (mins)

PART II. CAUSES OF EXCESS EMISSIONS (EE)

Duration of EE (mins) % of Operating Time¹

A. Startup/Shutdown

0 0%

B. Soot Blowing

0 0%

C. Control Equipment Malfunction

0 0%

D. Process Malfunction

0 0%

E. Other Known Causes

0 0%

F. Unknown Causes

0 0%

G. Total (A + B + ...F)

0 ² 0%

PART III. CAUSES OF CEMS DOWNTIME

Downtime (mins) % of Operating Time¹

A. Monitor Equipment Malfunction

0 0%

B. Non-Monitor Equipment Malfunction

0 0%

C. QA/QC Calibration

42 0.06%

D. Other Known Causes

102 0.16%

E. Unknown Causes

0 0%

F. Total (A + B + ...E)

144 ² 0.22%

¹ [EE (mins) or Downtime (mins) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature

Title

Energy Supply and Production Supervisor

Printed/Typed Name

Jerry Ahlsweide

Phone Number (incl. Area Code)
(920) 686-4211

Date Signed

7-28-2014

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Recommendation

DNR Reviewer

Date Reviewed

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Note: Completion of this form is required
pursuant to chapter NR 439, Wis. Adm. Code

Excess Emission Report - Opacity

Form 4500-125 (R 5/09)

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company 436035930 / Manitowoc Public Utilities

1 2 3 4 QTR. 2014

Address 701 Columbus Street
Manitowoc, WI 54220

Cert./CEA 06-20-2014 (date)

Manufacturer/Model Number
United Science Inc. Model No. 550

Stack/Process
S20 / B28

Emission Limit 20%

Total Source Operating Time in Quarter 118,310 (mins)

PART II. CAUSES OF EXCESS EMISSIONS (EE)

	Duration of EE (mins)	% of Operating Time ¹
A. Startup/Shutdown	0	0%
B. Soot Blowing	0	0%
C. Control Equipment Malfunction	0	0%
D. Process Malfunction	0	0%
E. Other Known Causes	0	0%
F. Unknown Causes	0	0%
G. Total (A + B + ...F)	0	0%

PART III. CAUSES OF CEMS DOWNTIME

	Downtime (mins)	% of Operating Time ¹
A. Monitor Equipment Malfunction	0	0%
B. Non-Monitor Equipment Malfunction	0	0%
C. QA/QC Calibration	30	0.03%
D. Other Known Causes	30	0.03%
E. Unknown Causes	0	0%
F. Total (A + B + ...E)	60	0.05%

¹ [EE (mins) or Downtime (mins) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature

Title

Energy Supply and Production Supervisor

Printed/Typed Name

Jerry Ahlsweide

Phone Number (incl. Area Code)
(920) 686-4211

Date Signed

7-28-2014

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Recommendation

DNR Reviewer

Date Reviewed

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2014 Cert CGA: 06/04/2014 (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: CGA, IAA, RAA, RATA
Manufacturer/Model Number	Stack Process	Emission Limit 0.89 lbs SO ₂ /mmBtu (30-day rolling ave.) 90% reduction of SO ₂ (30-day rolling ave.) 70% reduction of SO ₂ if S < 1%	
TEI Model: 43iSO2 S/N 0908635559	S20 / B28	Total Source Operating Time in Quarter 1,646.88 (hrs) Pollutant SO ₂	

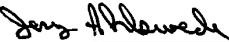
PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown		0	0%
B. Process Malfunction		0	0%
C. Control Equipment Malfunction		0	0%
D. Fuel Problems		0	0%
E. Other Known Causes		0	0%
F. Unknown Causes		0	0%
G. Total (A + B + ...F)		0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction		0	0%
B. Non-Monitor Equipment Malfunction		0	0%
C. QA/QC Calibration		1.53	0.09%
D. Other Known Causes		5.53	0.34%
E. Unknown Causes		0	0%
F. Total (A + B + ...E)		7.07	² 0.43%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature 	Title Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Phone Number (incl. Area Code) (920) 686-4211	Date Signed 7-28-2014

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Recommendation	DNR Reviewer
	Date Reviewed

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 04/01/2014 Through 04/30/2014

Source: S20

Standard Limit: 0.89

Parameter: S20SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
04/01/14	0	0	F	30	687	0.257 F
04/02/14	0	0	F	30	687	0.257 F
04/03/14	0	0	F	30	687	0.257 F
04/04/14	0	0	F	30	687	0.257 F
04/05/14	0	0	F	30	687	0.257 F
04/06/14	0	0	F	30	687	0.257 F
04/07/14	0	0	F	30	687	0.257 F
04/08/14	0	0	F	30	687	0.257 F
04/09/14	0	0	F	30	687	0.257 F
04/10/14	0	0	F	30	687	0.257 F
04/11/14	0	0	F	30	687	0.257 F
04/12/14	0	0	F	30	687	0.257 F
04/13/14	0	0	F	30	687	0.257 F
04/14/14	8	8	0.009	30	671	0.249
04/15/14	24	24	0.128	30	671	0.247
04/16/14	24	22	0.242	30	670	0.249
04/17/14	24	21	0.240	30	690	0.257
04/18/14	21	21	0.197	30	687	0.259
04/19/14	0	0	F	30	687	0.259 F
04/20/14	3	3	0.000	30	666	0.253
04/21/14	24	24	0.209	30	666	0.252
04/22/14	24	24	0.233	30	666	0.251
04/23/14	24	24	0.208	30	666	0.249
04/24/14	24	24	0.149	30	666	0.250
04/25/14	24	24	0.204	30	666	0.246
04/26/14	24	24	0.195	30	666	0.242
04/27/14	24	24	0.244	30	666	0.239
04/28/14	24	24	0.258	30	666	0.238
04/29/14	24	24	0.249	30	666	0.239
04/30/14	24	24	0.186	30	666	0.238

F = Unit Offline

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 05/01/2014 Through 05/31/2014

Source: S20

Standard Limit: 0.89

Parameter: S20SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
05/01/14	24	24	0.158	30	666	0.236
05/02/14	24	24	0.196	30	666	0.234
05/03/14	24	24	0.201	30	666	0.229
05/04/14	24	24	0.247	30	666	0.225
05/05/14	24	24	0.239	30	666	0.223
05/06/14	24	24	0.236	30	666	0.222
05/07/14	24	24	0.257	30	666	0.219
05/08/14	24	24	0.228	30	666	0.217
05/09/14	24	24	0.248	30	666	0.215
05/10/14	24	24	0.237	30	666	0.210
05/11/14	24	24	0.172	30	666	0.207
05/12/14	24	24	0.218	30	666	0.204
05/13/14	24	24	0.236	30	666	0.202
05/14/14	24	24	0.233	30	675	0.209
05/15/14	24	24	0.226	30	691	0.212
05/16/14	24	24	0.220	30	691	0.210
05/17/14	24	24	0.167	30	693	0.208
05/18/14	24	24	0.205	30	696	0.208
05/19/14	24	24	0.174	30	699	0.213
05/20/14	24	24	0.171	30	720	0.213
05/21/14	24	24	0.214	30	720	0.214
05/22/14	24	24	0.260	30	720	0.216
05/23/14	24	24	0.261	30	720	0.220
05/24/14	21	21	0.267	30	717	0.225
05/25/14	20	20	0.337	30	713	0.228
05/26/14	10	10	0.287	30	699	0.227
05/27/14	1	0		29	675	0.225
05/28/14	20	20	0.188	29	671	0.226
05/29/14	24	24	0.275	29	671	0.228
05/30/14	24	24	0.257	29	671	0.231
05/31/14	24	24	0.244	29	671	

F = Unit Offline

I = Invalid

E = Exceedance

Report Generated: 07/24/14 11:46

Report Version 3.1.1108

STACKVISION2\reportuser

1 of 1

MPU03973

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 06/01/2014 Through 06/30/2014

Source: S20 Standard Limit: 0.89
Parameter: S20SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
06/01/14	24	24	0.275	29	671	0.234
06/02/14	24	24	0.256	29	671	0.236
06/03/14	24	23	0.264	29	670	0.236
06/04/14	24	24	0.189	29	670	0.234
06/05/14	24	24	0.180	29	670	0.233
06/06/14	24	24	0.169	29	670	0.230
06/07/14	24	24	0.098	29	670	0.225
06/08/14	24	24	0.209	29	670	0.224
06/09/14	24	24	0.207	29	670	0.223
06/10/14	24	24	0.072	29	670	0.219
06/11/14	24	24	0.207	29	670	0.219
06/12/14	24	24	0.180	29	670	0.217
06/13/14	24	24	0.237	29	670	0.217
06/14/14	24	24	0.188	29	670	0.216
06/15/14	24	24	0.210	29	670	0.215
06/16/14	24	24	0.191	29	670	0.216
06/17/14	24	24	0.203	29	670	0.216
06/18/14	24	24	0.214	29	670	0.218
06/19/14	24	24	0.215	29	670	0.219
06/20/14	24	24	0.196	29	670	0.218
06/21/14	24	24	0.212	29	670	0.217
06/22/14	24	24	0.232	29	670	0.216
06/23/14	24	24	0.228	29	673	0.214
06/24/14	24	24	0.210	29	677	0.210
06/25/14	24	24	0.099	29	691	0.204
06/26/14	7	7	0.011	30	698	0.197
06/27/14	0	0	F	30	698	0.197 F
06/28/14	0	0	F	30	698	0.197 F
06/29/14	0	0	F	30	698	0.197 F
06/30/14	0	0	F	30	698	0.197 F

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 04/01/2014 Through 04/30/2014

Source: S20
Parameter: S20SO2RE

Standard Limit:

Low Limit:

90

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
04/01/14	0	0	F	30	687	90.7 F
04/02/14	0	0	F	30	687	90.7 F
04/03/14	0	0	F	30	687	90.7 F
04/04/14	0	0	F	30	687	90.7 F
04/05/14	0	0	F	30	687	90.7 F
04/06/14	0	0	F	30	687	90.7 F
04/07/14	0	0	F	30	687	90.7 F
04/08/14	0	0	F	30	687	90.7 F
04/09/14	0	0	F	30	687	90.7 F
04/10/14	0	0	F	30	687	90.7 F
04/11/14	0	0	F	30	687	90.7 F
04/12/14	0	0	F	30	687	90.7 F
04/13/14	0	0	F	30	687	90.7 F
04/14/14	8	8	99.7	30	671	90.9
04/15/14	24	24	96.4	30	671	91.1
04/16/14	24	22	93.1	30	670	91.3
04/17/14	24	21	92.5	30	690	91.0
04/18/14	21	21	91.8	30	687	91.0
04/19/14	0	0	F	30	687	91.0 F
04/20/14	3	3	100.0	30	666	91.4
04/21/14	24	24	94.7	30	666	91.5
04/22/14	24	24	92.1	30	666	91.6
04/23/14	24	24	92.6	30	666	91.8
04/24/14	24	24	94.2	30	666	91.8
04/25/14	24	24	93.9	30	666	92.0
04/26/14	24	24	95.1	30	666	92.1
04/27/14	24	24	93.7	30	666	92.3
04/28/14	24	24	92.8	30	666	92.4
04/29/14	24	24	92.6	30	666	92.5
04/30/14	24	24	93.9	30	666	92.6

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 05/01/2014 Through 05/31/2014

Source:	S20	Standard Limit:			Low Limit:	90
		Daily		30 - Day		
Date	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
05/01/14	24	24	95.1	30	666	92.9
05/02/14	24	24	94.4	30	666	93.1
05/03/14	24	24	93.9	30	666	93.3
05/04/14	24	24	91.7	30	666	93.3
05/05/14	24	24	89.2	30	666	93.2
05/06/14	24	24	89.9	30	666	93.1
05/07/14	24	24	89.5	30	666	93.1
05/08/14	24	24	92.1	30	666	93.2
05/09/14	24	24	90.5	30	666	93.2
05/10/14	24	24	89.8	30	666	93.1
05/11/14	24	24	93.9	30	666	93.2
05/12/14	24	24	93.3	30	666	93.3
05/13/14	24	24	93.2	30	666	93.3
05/14/14	24	24	92.3	30	675	93.3
05/15/14	24	24	92.7	30	691	93.0
05/16/14	24	24	93.1	30	691	92.9
05/17/14	24	24	94.2	30	693	93.0
05/18/14	24	24	92.8	30	696	93.0
05/19/14	24	24	94.9	30	699	93.1
05/20/14	24	24	94.8	30	720	92.9
05/21/14	24	24	93.5	30	720	92.9
05/22/14	24	24	92.7	30	720	92.9
05/23/14	24	24	93.2	30	720	92.9
05/24/14	21	21	93.4	30	717	92.9
05/25/14	20	20	91.2	30	713	92.8
05/26/14	10	10	93.0	30	699	92.7
05/27/14	1	0		29	675	92.7
05/28/14	20	20	95.5	29	671	92.8
05/29/14	24	24	93.4	29	671	92.8
05/30/14	24	24	93.0	29	671	92.8
05/31/14	24	24	92.2	29	671	92.7

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 06/01/2014 Through 06/30/2014

Source:	S20	Standard Limit:						
		Low Limit:		90				
Parameter:	S20SO2RE	Daily			30 - Day			
		Operating	Hours	Valid Hours	Average	Valid Days	Valid Hours	
06/01/14		24	24		93.8	29	671	92.7
06/02/14		24	24		93.7	29	671	92.6
06/03/14		24	23		93.1	29	670	92.7
06/04/14		24	24		94.2	29	670	92.9
06/05/14		24	24		94.8	29	670	93.0
06/06/14		24	24		94.6	29	670	93.2
06/07/14		24	24		97.4	29	670	93.4
06/08/14		24	24		94.1	29	670	93.5
06/09/14		24	24		93.7	29	670	93.6
06/10/14		24	24		97.7	29	670	93.8
06/11/14		24	24		93.3	29	670	93.8
06/12/14		24	24		93.0	29	670	93.8
06/13/14		24	24		92.5	29	670	93.8
06/14/14		24	24		94.6	29	670	93.8
06/15/14		24	24		93.7	29	670	93.9
06/16/14		24	24		94.9	29	670	93.9
06/17/14		24	24		94.0	29	670	93.9
06/18/14		24	24		93.4	29	670	93.9
06/19/14		24	24		94.2	29	670	93.8
06/20/14		24	24		92.8	29	670	93.9
06/21/14		24	24		93.6	29	670	93.8
06/22/14		24	24		92.3	29	670	93.8
06/23/14		24	24		92.4	29	673	93.8
06/24/14		24	24		92.2	29	677	93.8
06/25/14		24	24		95.8	29	691	93.9
06/26/14		7	7		99.6	30	698	94.1
06/27/14		0	0		F	30	698	94.1 F
06/28/14		0	0		F	30	698	94.1 F
06/29/14		0	0		F	30	698	94.1 F
06/30/14		0	0		F	30	698	94.1 F

F = Unit Offline

I = Invalid

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2014 Cert. <u>CGA: 06/04/2014</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: <u>CGA, IAA, RAA, RATA</u>
Manufacturer/Model Number	Stack Process	<u>Emission Limit 0.55 lbs NOx/mmBtu (30-day rolling ave.)</u> <u>0.20 lbs NOx/mmBtu during ozone season</u>	
TEI Model: 42iNOx S/N 0908635558	S20 / B28	Total Source Operating Time in Quarter <u>1,646.88</u> (hrs)	
		Pollutant <u>NOx</u>	

PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
		0	0%
	G. Total (A + B + ...F)	0	² 0%
PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction		0	0%
		0	0%
		1.53	0.09%
		5.53	0.34%
	E. Unknown Causes	0	0%
	F. Total (A + B + ...E)	7.07	² 0.43%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title	
	Energy Supply and Production Supervisor	
Printed/Typed Name	Phone Number (incl. Area Code) (920) 686-4211	Date Signed <u>7-28-2014</u>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation	DNR Reviewer
	Date Reviewed

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 04/01/2014 Through 04/30/2014

Source: S20

Standard Limit: 0.2

Parameter: S20NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
04/01/14	0	0	F	30	687	0.110 F
04/02/14	0	0	F	30	687	0.110 F
04/03/14	0	0	F	30	687	0.110 F
04/04/14	0	0	F	30	687	0.110 F
04/05/14	0	0	F	30	687	0.110 F
04/06/14	0	0	F	30	687	0.110 F
04/07/14	0	0	F	30	687	0.110 F
04/08/14	0	0	F	30	687	0.110 F
04/09/14	0	0	F	30	687	0.110 F
04/10/14	0	0	F	30	687	0.110 F
04/11/14	0	0	F	30	687	0.110 F
04/12/14	0	0	F	30	687	0.110 F
04/13/14	0	0	F	30	687	0.110 F
04/14/14	8	8	0.002	30	671	0.107
04/15/14	24	24	0.108	30	671	0.106
04/16/14	24	22	0.165	30	670	0.107
04/17/14	24	21	0.105	30	690	0.110
04/18/14	21	21	0.135	30	687	0.110
04/19/14	0	0	F	30	687	0.110 F
04/20/14	3	3	0.026	30	666	0.106
04/21/14	24	24	0.096	30	666	0.106
04/22/14	24	24	0.101	30	666	0.106
04/23/14	24	24	0.117	30	666	0.106
04/24/14	24	24	0.116	30	666	0.105
04/25/14	24	24	0.084	30	666	0.103
04/26/14	24	24	0.088	30	666	0.103
04/27/14	24	24	0.090	30	666	0.103
04/28/14	24	24	0.079	30	666	0.103
04/29/14	24	24	0.075	30	666	0.101
04/30/14	24	24	0.087	30	666	0.100

F = Unit Offline

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 05/01/2014 Through 05/31/2014

Source: S20

Standard Limit: 0.2

Parameter: S20NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
05/01/14	24	24	0.092	30	666	0.099
05/02/14	24	24	0.092	30	666	0.098
05/03/14	24	24	0.118	30	666	0.099
05/04/14	24	24	0.140	30	666	0.099
05/05/14	24	24	0.091	30	666	0.098
05/06/14	24	24	0.114	30	666	0.098
05/07/14	24	24	0.093	30	666	0.097
05/08/14	24	24	0.086	30	666	0.095
05/09/14	24	24	0.087	30	666	0.094
05/10/14	24	24	0.131	30	666	0.095
05/11/14	24	24	0.125	30	666	0.096
05/12/14	24	24	0.093	30	666	0.097
05/13/14	24	24	0.085	30	666	0.097
05/14/14	24	24	0.084	30	675	0.097
05/15/14	24	24	0.074	30	691	0.099
05/16/14	24	24	0.069	30	691	0.098
05/17/14	24	24	0.110	30	693	0.096
05/18/14	24	24	0.155	30	696	0.098
05/19/14	24	24	0.094	30	699	0.096
05/20/14	24	24	0.079	30	720	0.098
05/21/14	24	24	0.077	30	720	0.097
05/22/14	24	24	0.061	30	720	0.096
05/23/14	24	24	0.067	30	720	0.094
05/24/14	21	21	0.059	30	717	0.093
05/25/14	20	20	0.058	30	713	0.092
05/26/14	10	10	0.035	30	699	0.090
05/27/14	1	0		29	675	0.090
05/28/14	20	20	0.036	29	671	0.088
05/29/14	24	24	0.055	29	671	0.088
05/30/14	24	24	0.064	29	671	0.087
05/31/14	24	24	0.069	29	671	0.086

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 06/01/2014 Through 06/30/2014

Source: S20

Standard Limit:

0.2

Parameter: S20NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
06/01/14	24	24	0.066	29	671	0.085
06/02/14	24	24	0.051	29	671	0.083
06/03/14	24	23	0.054	29	670	0.080
06/04/14	24	24	0.072	29	670	0.079
06/05/14	24	24	0.076	29	670	0.078
06/06/14	24	24	0.084	29	670	0.078
06/07/14	24	24	0.127	29	670	0.079
06/08/14	24	24	0.085	29	670	0.079
06/09/14	24	24	0.071	29	670	0.077
06/10/14	24	24	0.115	29	670	0.077
06/11/14	24	24	0.053	29	670	0.075
06/12/14	24	24	0.072	29	670	0.075
06/13/14	24	24	0.071	29	670	0.074
06/14/14	24	24	0.101	29	670	0.075
06/15/14	24	24	0.089	29	670	0.076
06/16/14	24	24	0.070	29	670	0.075
06/17/14	24	24	0.073	29	670	0.072
06/18/14	24	24	0.070	29	670	0.071
06/19/14	24	24	0.074	29	670	0.071
06/20/14	24	24	0.094	29	670	0.071
06/21/14	24	24	0.071	29	670	0.072
06/22/14	24	24	0.072	29	670	0.072
06/23/14	24	24	0.053	29	673	0.072
06/24/14	24	24	0.058	29	677	0.072
06/25/14	24	24	0.201	29	691	0.077
06/26/14	7	7	0.341	30	698	0.086
06/27/14	0	0	F	30	698	0.086 F
06/28/14	0	0	F	30	698	0.086 F
06/29/14	0	0	F	30	698	0.086 F
06/30/14	0	0	F	30	698	0.086 F

F = Unit Offline

I = Invalid

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2014 Cert. CGA: 06/04/2014 (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: CGA, IAA, RAA, RATA
Manufacturer/Model Number			Emission Limit 0.36 lbs CO/mmBtu (30-day rolling ave.)
TEI Model: 48iCO S/N CMO8270019	Stack Process	S20 / B28	Total Source Operating Time in Quarter 1,616.10 (hrs) Pollutant CO

PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A.	Startup/Shutdown	0	0%
B.	Process Malfunction	0	0%
C.	Control Equipment Malfunction	0	0%
D.	Fuel Problems	0	0%
E.	Other Known Causes	0	0%
F.	Unknown Causes	0	0%
G.	Total (A + B + ...F)	0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A.	Monitor Equipment Malfunction	0	0%
B.	Non-Monitor Equipment Malfunction	0	0%
C	QA/QC Calibration	2.00	0.12%
D	Other Known Causes	5.53	0.34%
E	Unknown Causes	0	0%
F	Total (A + B + ...E)	7.53	² 0.47%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title	
	Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Phone Number (incl. Area Code) (920) 686-4211	Date Signed 7-28-2014

LEAVE BLANK - FOR DNR USE ONLY		
Recommendation		
	DNR Reviewer	
	Date Reviewed	

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 04/01/2014 Through 04/30/2014

Source: S20

Standard Limit: 0.36

Parameter: S20CO#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
04/01/14	0	0	F	30	702	0.030 F
04/02/14	0	0	F	30	702	0.030 F
04/03/14	0	0	F	30	702	0.030 F
04/04/14	0	0	F	30	702	0.030 F
04/05/14	0	0	F	30	702	0.030 F
04/06/14	0	0	F	30	702	0.030 F
04/07/14	0	0	F	30	702	0.030 F
04/08/14	0	0	F	30	702	0.030 F
04/09/14	0	0	F	30	702	0.030 F
04/10/14	0	0	F	30	702	0.030 F
04/11/14	0	0	F	30	702	0.030 F
04/12/14	0	0	F	30	702	0.030 F
04/13/14	0	0	F	30	702	0.030 F
04/14/14	0	0	F	30	702	0.030 F
04/15/14	14	14	0.454	30	692	0.044
04/16/14	24	22	0.061	30	690	0.044
04/17/14	24	21	0.048	30	687	0.045
04/18/14	21	21	0.043	30	685	0.045
04/19/14	0	0	F	30	685	0.045 F
04/20/14	0	0	F	30	685	0.045 F
04/21/14	22	22	0.055	30	688	0.046
04/22/14	24	24	0.024	30	688	0.046
04/23/14	24	23	0.022	30	687	0.046
04/24/14	24	24	0.031	30	687	0.047
04/25/14	24	24	0.037	30	687	0.047
04/26/14	24	24	0.039	30	687	0.049
04/27/14	24	24	0.068	30	687	0.050
04/28/14	24	24	0.052	30	687	0.051
04/29/14	24	24	0.036	30	687	0.051
04/30/14	24	24	0.034	30	687	0.052

F = Unit Offline

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 05/01/2014 Through 05/31/2014

Source: S20

Standard Limit: 0.36

Parameter: S20CO#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
05/01/14	24	24	0.032	30	687	0.053
05/02/14	24	24	0.030	30	688	0.053
05/03/14	24	24	0.032	30	690	0.054
05/04/14	24	24	0.051	30	690	0.056
05/05/14	24	24	0.038	30	690	0.055
05/06/14	24	24	0.029	30	690	0.055
05/07/14	24	24	0.027	30	690	0.055
05/08/14	24	24	0.029	30	690	0.055
05/09/14	24	24	0.044	30	690	0.054
05/10/14	24	24	0.046	30	690	0.055
05/11/14	24	24	0.043	30	690	0.055
05/12/14	24	24	0.047	30	690	0.055
05/13/14	24	24	0.050	30	690	0.055
05/14/14	24	24	0.040	30	690	0.055
05/15/14	24	24	0.038	30	690	0.054
05/16/14	24	24	0.033	30	699	0.054
05/17/14	24	24	0.034	30	709	0.040
05/18/14	24	24	0.046	30	711	0.039
05/19/14	24	24	0.044	30	714	0.039
05/20/14	24	24	0.043	30	717	0.039
05/21/14	24	24	0.055	30	719	0.040
05/22/14	24	24	0.059	30	719	0.041
05/23/14	24	24	0.045	30	720	0.041
05/24/14	21	21	0.047	30	717	0.041
05/25/14	18	18	0.069	30	711	0.043
05/26/14	10	10	0.053	30	697	0.043
05/27/14	0	0	F	30	697	0.043 F
05/28/14	15	15	0.082	30	688	0.044
05/29/14	24	24	0.075	30	688	0.044
05/30/14	24	24	0.046	30	688	0.045
05/31/14	24	24	0.051	30	688	0.045

F = Unit Offline

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 06/01/2014 Through 06/30/2014

Source: S20

Standard Limit: 0.36

Parameter: S20CO#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
06/01/14	24	24	0.079	30	688	0.047
06/02/14	24	24	0.077	30	688	0.048
06/03/14	24	23	0.139	30	687	0.052
06/04/14	24	24	0.158	30	687	0.056
06/05/14	24	24	0.070	30	687	0.057
06/06/14	24	24	0.047	30	687	0.057
06/07/14	24	24	0.048	30	687	0.058
06/08/14	24	24	0.053	30	687	0.059
06/09/14	24	24	0.040	30	687	0.059
06/10/14	24	24	0.051	30	687	0.059
06/11/14	24	24	0.072	30	687	0.060
06/12/14	24	24	0.058	30	687	0.060
06/13/14	24	24	0.048	30	687	0.060
06/14/14	24	24	0.057	30	687	0.061
06/15/14	24	24	0.058	30	687	0.061
06/16/14	24	24	0.061	30	687	0.062
06/17/14	24	24	0.053	30	687	0.063
06/18/14	24	24	0.053	30	687	0.063
06/19/14	24	24	0.057	30	687	0.064
06/20/14	24	24	0.054	30	687	0.064
06/21/14	24	24	0.034	30	687	0.063
06/22/14	24	24	0.037	30	687	0.062
06/23/14	24	24	0.039	30	687	0.062
06/24/14	24	24	0.043	30	690	0.062
06/25/14	24	24	0.033	30	696	0.061
06/26/14	7	7	0.040	30	693	0.060
06/27/14	0	0	F	30	693	0.060 F
06/28/14	0	0	F	30	693	0.060 F
06/29/14	0	0	F	30	693	0.060 F
06/30/14	0	0	F	30	693	0.060 F

F = Unit Offline

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities	1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> QTR. 2014 Cert. <u>CGA: 06-19-2014</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220	Type of Audit: <u>CGA, IAA, RAA, RATA</u>
Manufacturer/Model Number	Stack Process	Emission Limit 0.30 lbs SO ₂ /mmBtu (30-day rolling ave.) 70% reduction of SO ₂ (30-day rolling ave.)
TEI Model: 43iSO2 S/N 43i0510511567	S10 / B09	Total Source Operating Time in Quarter <u>866.93</u> (hrs) Pollutant <u>SO₂</u>

PART II. CAUSES OF EXCESS EMISSIONS (EE)

	Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown	0	0%
B. Process Malfunction	0	0%
C. Control Equipment Malfunction	0	0%
D. Fuel Problems	0	0%
E. Other Known Causes	0	0%
F. Unknown Causes	0	0%
G. Total (A + B + ...F)	0	² 0%

PART III. CAUSES OF CEMS DOWNTIME

	Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction	0	0%
B. Non-Monitor Equipment Malfunction	0	0%
C. QA/QC Calibration	0	0%
D. Other Known Causes	3	0.35%
E. Unknown Causes	0	0%
F. Total (A + B + ...E)	3	² 0.35%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title
<i>Jerry Ahlsweide</i>	Energy Supply and Production Supervisor
Printed/Typed Name Jerry Ahlsweide	Phone Number (incl. Area Code) (920) 686-4211

LEAVE BLANK - FOR DNR USE ONLY

Recommendation	DNR Reviewer
	Date Reviewed

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 04/01/2014 Through 04/30/2014

Source: B9

Standard Limit:

0.3

Parameter: B9SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
04/01/14	24	24	0.240	29	662	0.238
04/02/14	24	24	0.227	29	662	0.237
04/03/14	24	24	0.241	29	662	0.237
04/04/14	24	24	0.237	29	662	0.237
04/05/14	24	24	0.240	29	663	0.236
04/06/14	24	24	0.209	29	668	0.230
04/07/14	24	24	0.232	29	668	0.230
04/08/14	24	24	0.239	29	670	0.230
04/09/14	24	24	0.229	29	670	0.229
04/10/14	24	24	0.239	29	670	0.229
04/11/14	24	24	0.236	29	670	0.229
04/12/14	24	24	0.245	29	670	0.229
04/13/14	24	24	0.242	29	670	0.229
04/14/14	24	24	0.242	29	671	0.229
04/15/14	24	24	0.242	29	671	0.229
04/16/14	24	22	0.241	29	671	0.229
04/17/14	22	20	0.230	30	691	0.229
04/18/14	0	0	F	30	691	0.229 F
04/19/14	0	0	F	30	691	0.229 F
04/20/14	0	0	F	30	691	0.229 F
04/21/14	0	0	F	30	691	0.229 F
04/22/14	0	0	F	30	691	0.229 F
04/23/14	0	0	F	30	691	0.229 F
04/24/14	0	0	F	30	691	0.229 F
04/25/14	0	0	F	30	691	0.229 F
04/26/14	0	0	F	30	691	0.229 F
04/27/14	0	0	F	30	691	0.229 F
04/28/14	0	0	F	30	691	0.229 F
04/29/14	0	0	F	30	691	0.229 F
04/30/14	0	0	F	30	691	0.229 F

F = Unit Offline

I = Inactive

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 05/01/2014 Through 05/31/2014

Source:

B9

Standard Limit:

0.3

Parameter:

B9SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
05/01/14	0	0	F	30	691	0.229 F
05/02/14	0	0	F	30	691	0.229 F
05/03/14	0	0	F	30	691	0.229 F
05/04/14	0	0	F	30	691	0.229 F
05/05/14	0	0	F	30	691	0.229 F
05/06/14	0	0	F	30	691	0.229 F
05/07/14	0	0	F	30	691	0.229 F
05/08/14	0	0	F	30	691	0.229 F
05/09/14	0	0	F	30	691	0.229 F
05/10/14	0	0	F	30	691	0.229 F
05/11/14	0	0	F	30	691	0.229 F
05/12/14	0	0	F	30	691	0.229 F
05/13/14	0	0	F	30	691	0.229 F
05/14/14	0	0	F	30	691	0.229 F
05/15/14	0	0	F	30	691	0.229 F
05/16/14	1	1	0.000	30	668	0.221
05/17/14	0	0	F	30	668	0.221 F
05/18/14	0	0	F	30	668	0.221 F
05/19/14	0	0	F	30	668	0.221 F
05/20/14	0	0	F	30	668	0.221 F
05/21/14	0	0	F	30	668	0.221 F
05/22/14	0	0	F	30	668	0.221 F
05/23/14	0	0	F	30	668	0.221 F
05/24/14	0	0	F	30	668	0.221 F
05/25/14	2	2	0.000	30	646	0.212
05/26/14	24	24	0.153	30	647	0.209
05/27/14	24	24	0.235	30	647	0.209
05/28/14	24	24	0.240	30	647	0.209
05/29/14	24	24	0.238	30	647	0.209
05/30/14	24	24	0.229	30	647	0.209
05/31/14	24	24	0.236	30	647	0.209

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 06/01/2014 Through 06/30/2014

Source:

B9

Standard Limit:

0.3

Parameter:

B9SO2#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
06/01/14	24	24	0.231	30	647	0.209
06/02/14	24	24	0.230	30	647	0.208
06/03/14	23	23	0.234	30	648	0.209
06/04/14	0	0	F	30	648	0.209 F
06/05/14	0	0	F	30	648	0.209 F
06/06/14	0	0	F	30	648	0.209 F
06/07/14	0	0	F	30	648	0.209 F
06/08/14	0	0	F	30	648	0.209 F
06/09/14	0	0	F	30	648	0.209 F
06/10/14	0	0	F	30	648	0.209 F
06/11/14	0	0	F	30	648	0.209 F
06/12/14	0	0	F	30	648	0.209 F
06/13/14	0	0	F	30	648	0.209 F
06/14/14	0	0	F	30	648	0.209 F
06/15/14	4	4	0.000	30	648	0.209
06/16/14	24	24	0.283	30	648	0.211
06/17/14	24	24	0.226	30	648	0.210
06/18/14	24	24	0.245	30	648	0.211
06/19/14	24	24	0.213	30	648	0.210
06/20/14	23	23	0.224	30	647	0.209
06/21/14	0	0	F	30	647	0.209 F
06/22/14	0	0	F	30	647	0.209 F
06/23/14	0	0	F	30	647	0.209 F
06/24/14	0	0	F	30	647	0.209 F
06/25/14	2	2	0.000	30	625	0.201
06/26/14	24	24	0.218	30	625	0.202
06/27/14	24	24	0.230	30	625	0.202
06/28/14	24	24	0.238	30	625	0.202
06/29/14	24	24	0.229	30	625	0.202
06/30/14	24	24	0.229	30	625	0.201

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 04/01/2014 Through 04/30/2014

Source:	B9	Standard Limit:					
		Low Limit:			90		
Parameter:	B9SO2RED	Daily			30 - Day		
		Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	
04/01/14		24	24	96.3	29	662	96.4
04/02/14		24	24	96.3	29	662	96.4
04/03/14		24	24	96.2	29	662	96.4
04/04/14		24	24	96.2	29	662	96.4
04/05/14		24	24	96.2	29	663	96.4
04/06/14		24	24	96.8	29	668	96.4
04/07/14		24	24	96.3	29	668	96.4
04/08/14		24	24	95.8	29	670	96.4
04/09/14		24	24	96.2	29	670	96.4
04/10/14		24	24	96.0	29	670	96.4
04/11/14		24	24	96.2	29	670	96.4
04/12/14		24	24	95.9	29	670	96.4
04/13/14		24	24	96.0	29	670	96.4
04/14/14		24	24	95.7	29	671	96.4
04/15/14		24	24	96.0	29	671	96.4
04/16/14		24	22	95.3	29	671	96.3
04/17/14		22	20	96.0	30	691	96.3
04/18/14		0	0	F	30	691	96.3 F
04/19/14		0	0	F	30	691	96.3 F
04/20/14		0	0	F	30	691	96.3 F
04/21/14		0	0	F	30	691	96.3 F
04/22/14		0	0	F	30	691	96.3 F
04/23/14		0	0	F	30	691	96.3 F
04/24/14		0	0	F	30	691	96.3 F
04/25/14		0	0	F	30	691	96.3 F
04/26/14		0	0	F	30	691	96.3 F
04/27/14		0	0	F	30	691	96.3 F
04/28/14		0	0	F	30	691	96.3 F
04/29/14		0	0	F	30	691	96.3 F
04/30/14		0	0	F	30	691	96.3 F

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 05/01/2014 Through 05/31/2014

Source:	B9	Standard Limit:					
		Low Limit:			90		
Parameter:	B9SO2RED	Daily			30 - Day		
		Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	
Date						Average	
05/01/14		0	0	F	30	691	96.3 F
05/02/14		0	0	F	30	691	96.3 F
05/03/14		0	0	F	30	691	96.3 F
05/04/14		0	0	F	30	691	96.3 F
05/05/14		0	0	F	30	691	96.3 F
05/06/14		0	0	F	30	691	96.3 F
05/07/14		0	0	F	30	691	96.3 F
05/08/14		0	0	F	30	691	96.3 F
05/09/14		0	0	F	30	691	96.3 F
05/10/14		0	0	F	30	691	96.3 F
05/11/14		0	0	F	30	691	96.3 F
05/12/14		0	0	F	30	691	96.3 F
05/13/14		0	0	F	30	691	96.3 F
05/14/14		0	0	F	30	691	96.3 F
05/15/14		0	0	F	30	691	96.3 F
05/16/14		1	1	100.0	30	668	96.5
05/17/14		0	0	F	30	668	96.5 F
05/18/14		0	0	F	30	668	96.5 F
05/19/14		0	0	F	30	668	96.5 F
05/20/14		0	0	F	30	668	96.5 F
05/21/14		0	0	F	30	668	96.5 F
05/22/14		0	0	F	30	668	96.5 F
05/23/14		0	0	F	30	668	96.5 F
05/24/14		0	0	F	30	668	96.5 F
05/25/14		2	2	100.0	30	646	96.6
05/26/14		24	24	97.3	30	647	96.6
05/27/14		24	24	96.0	30	647	96.6
05/28/14		24	24	95.4	30	647	96.6
05/29/14		24	24	95.8	30	647	96.6
05/30/14		24	24	95.6	30	647	96.5
05/31/14		24	24	95.4	30	647	96.5

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 06/01/2014 Through 06/30/2014

Source:	B9	Standard Limit:					
		Low Limit:			90		
Parameter:	B9SO2RED	Daily			30 - Day		
		Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	
Date						Average	
06/01/14		24	24	96.5	30	647	96.5
06/02/14		24	24	96.5	30	647	96.5
06/03/14		23	23	96.5	30	648	96.5
06/04/14		0	0	F	30	648	96.5 F
06/05/14		0	0	F	30	648	96.5 F
06/06/14		0	0	F	30	648	96.5 F
06/07/14		0	0	F	30	648	96.5 F
06/08/14		0	0	F	30	648	96.5 F
06/09/14		0	0	F	30	648	96.5 F
06/10/14		0	0	F	30	648	96.5 F
06/11/14		0	0	F	30	648	96.5 F
06/12/14		0	0	F	30	648	96.5 F
06/13/14		0	0	F	30	648	96.5 F
06/14/14		0	0	F	30	648	96.5 F
06/15/14		4	4	100.0	30	648	96.5
06/16/14		24	24	95.4	30	648	96.5
06/17/14		24	24	96.1	30	648	96.4
06/18/14		24	24	96.0	30	648	96.4
06/19/14		24	24	96.5	30	648	96.5
06/20/14		23	23	96.5	30	647	96.5
06/21/14		0	0	F	30	647	96.5 F
06/22/14		0	0	F	30	647	96.5 F
06/23/14		0	0	F	30	647	96.5 F
06/24/14		0	0	F	30	647	96.5 F
06/25/14		2	2	100.0	30	625	96.6
06/26/14		24	24	96.7	30	625	96.6
06/27/14		24	24	95.8	30	625	96.6
06/28/14		24	24	96.3	30	625	96.6
06/29/14		24	24	96.6	30	625	96.6
06/30/14		24	24	96.3	30	625	96.6

F = Unit Offline

I = Invalid

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2013 Cert. <u>CGA: 06-19-2014</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: <u>CGA</u> , IAA, RAA, RATA
		Emission Limit <u>0.155 lbs NO_x/mmBtu (30-day rolling ave.)</u>	
Manufacturer/Model Number	Stack Process	Total Source Operating Time in Quarter <u>866.93</u> (hrs)	
TEI Model: 42iNOx S/N 42i0510511562	S10 / B09	Pollutant <u>NO_x</u>	

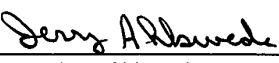
PART II. CAUSES OF EXCESS EMISSIONS (EE)		Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown		0	0%
B. Process Malfunction		0	0%
C. Control Equipment Malfunction		0	0%
D. Fuel Problems		0	0%
E. Other Known Causes		0	0%
F. Unknown Causes		0	0%
G. Total (A + B + ...F)		0	² 0%

PART III. CAUSES OF CEMS DOWNTIME		Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction		0	0%
B. Non-Monitor Equipment Malfunction		0	0%
C. QA/QC Calibration		0	0%
D. Other Known Causes		3	0.35%
E. Unknown Causes		0	0%
F. Total (A + B + ...E)		3	² 0.35%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title	
	Energy Supply and Production Supervisor	
Printed/Typed Name	Phone Number (incl. Area Code) (920) 686-4211	Date Signed <u>7-28-2014</u>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation	DNR Reviewer
	Date Reviewed

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 04/01/2014 Through 04/30/2014

Source:

B9

Standard Limit:

0.15

Parameter:

B9NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
04/01/14	24	24	0.052	29	662	0.061
04/02/14	24	24	0.043	29	662	0.060
04/03/14	24	24	0.045	29	662	0.060
04/04/14	24	24	0.042	29	662	0.060
04/05/14	24	24	0.051	29	663	0.059
04/06/14	24	24	0.060	29	668	0.059
04/07/14	24	24	0.038	29	668	0.059
04/08/14	24	24	0.028	29	670	0.059
04/09/14	24	24	0.035	29	670	0.058
04/10/14	24	24	0.036	29	670	0.058
04/11/14	24	24	0.041	29	670	0.057
04/12/14	24	24	0.050	29	670	0.057
04/13/14	24	24	0.054	29	670	0.056
04/14/14	24	24	0.029	29	671	0.053
04/15/14	24	24	0.035	29	671	0.052
04/16/14	24	22	0.057	29	671	0.050
04/17/14	22	20	0.048	30	691	0.050
04/18/14	0	0	F	30	691	0.050 F
04/19/14	0	0	F	30	691	0.050 F
04/20/14	0	0	F	30	691	0.050 F
04/21/14	0	0	F	30	691	0.050 F
04/22/14	0	0	F	30	691	0.050 F
04/23/14	0	0	F	30	691	0.050 F
04/24/14	0	0	F	30	691	0.050 F
04/25/14	0	0	F	30	691	0.050 F
04/26/14	0	0	F	30	691	0.050 F
04/27/14	0	0	F	30	691	0.050 F
04/28/14	0	0	F	30	691	0.050 F
04/29/14	0	0	F	30	691	0.050 F
04/30/14	0	0	F	30	691	0.050 F

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 05/01/2014 Through 05/31/2014

Source:

B9

Standard Limit:

0.15

Parameter:

B9NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
05/01/14	0	0	F	30	691	0.050 F
05/02/14	0	0	F	30	691	0.050 F
05/03/14	0	0	F	30	691	0.050 F
05/04/14	0	0	F	30	691	0.050 F
05/05/14	0	0	F	30	691	0.050 F
05/06/14	0	0	F	30	691	0.050 F
05/07/14	0	0	F	30	691	0.050 F
05/08/14	0	0	F	30	691	0.050 F
05/09/14	0	0	F	30	691	0.050 F
05/10/14	0	0	F	30	691	0.050 F
05/11/14	0	0	F	30	691	0.050 F
05/12/14	0	0	F	30	691	0.050 F
05/13/14	0	0	F	30	691	0.050 F
05/14/14	0	0	F	30	691	0.050 F
05/15/14	0	0	F	30	691	0.050 F
05/16/14	1	1	0.034	30	668	0.048
05/17/14	0	0	F	30	668	0.048 F
05/18/14	0	0	F	30	668	0.048 F
05/19/14	0	0	F	30	668	0.048 F
05/20/14	0	0	F	30	668	0.048 F
05/21/14	0	0	F	30	668	0.048 F
05/22/14	0	0	F	30	668	0.048 F
05/23/14	0	0	F	30	668	0.048 F
05/24/14	0	0	F	30	668	0.048 F
05/25/14	2	2	0.047	30	646	0.048
05/26/14	24	24	0.098	30	647	0.049
05/27/14	24	24	0.061	30	647	0.049
05/28/14	24	24	0.045	30	647	0.048
05/29/14	24	24	0.050	30	647	0.047
05/30/14	24	24	0.057	30	647	0.047
05/31/14	24	24	0.052	30	647	0.048

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 06/01/2014 Through 06/30/2014

Source:

B9

Standard Limit:

0.15

Parameter:

B9NOX#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
06/01/14	24	24	0.050	30	647	0.048
06/02/14	24	24	0.034	30	647	0.048
06/03/14	23	23	0.033	30	648	0.047
06/04/14	0	0	F	30	648	0.047 F
06/05/14	0	0	F	30	648	0.047 F
06/06/14	0	0	F	30	648	0.047 F
06/07/14	0	0	F	30	648	0.047 F
06/08/14	0	0	F	30	648	0.047 F
06/09/14	0	0	F	30	648	0.047 F
06/10/14	0	0	F	30	648	0.047 F
06/11/14	0	0	F	30	648	0.047 F
06/12/14	0	0	F	30	648	0.047 F
06/13/14	0	0	F	30	648	0.047 F
06/14/14	0	0	F	30	648	0.047 F
06/15/14	4	4	0.050	30	648	0.047
06/16/14	24	24	0.046	30	648	0.047
06/17/14	24	24	0.043	30	648	0.046
06/18/14	24	24	0.044	30	648	0.046
06/19/14	24	24	0.067	30	648	0.047
06/20/14	23	23	0.061	30	647	0.048
06/21/14	0	0	F	30	647	0.048 F
06/22/14	0	0	F	30	647	0.048 F
06/23/14	0	0	F	30	647	0.048 F
06/24/14	0	0	F	30	647	0.048 F
06/25/14	2	2	0.039	30	625	0.047
06/26/14	24	24	0.057	30	625	0.047
06/27/14	24	24	0.055	30	625	0.048
06/28/14	24	24	0.052	30	625	0.049
06/29/14	24	24	0.063	30	625	0.050
06/30/14	24	24	0.044	30	625	0.050

F = Unit Offline

I = Inactive

E = Exceedance

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, Wisconsin 53707

Excess Emission Report - SO₂/NO_x/TRS/H₂S/VOC/CO/Hg
Form 4500-126 (R 5/09)

Note: Completion of this form is required pursuant to chapter NR 439, Wis. Adm. Code.

Date Received by DNR

PART I. FACILITY INFORMATION

FID/Name of Company	436035930 / Manitowoc Public Utilities		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 QTR. 2013 Cert. <u>CGA: 06-19-2014</u> (date)
Address	701 Columbus Street, Manitowoc, WI 54220		Type of Audit: <u>CGA, IAA, RAA, RATA</u>
		Emission Limit <u>0.15 lbs CO/mmBtu (30-day rolling ave.)</u>	
Manufacturer/Model Number	Stack Process	Total Source Operating Time in Quarter <u>843.68</u> (hrs)	
TEI Model: 48iCO S/N 48i0510511587	S10 / B09	Pollutant <u>CO</u>	

PART II. CAUSES OF EXCESS EMISSIONS (EE)

	Duration of EE (hrs)	% of Operating Time ¹
A. Startup/Shutdown	0	0%
B. Process Malfunction	0	0%
C. Control Equipment Malfunction	0	0%
D. Fuel Problems	0	0%
E. Other Known Causes	0	0%
F. Unknown Causes	0	0%
G. Total (A + B + ...F)	0	² 0%

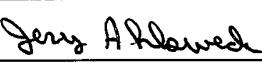
PART III. CAUSES OF CEMS DOWNTIME

	Downtime (hrs)	% of Operating Time ¹
A. Monitor Equipment Malfunction	0	0%
B. Non-Monitor Equipment Malfunction	0	0%
C. QA/QC Calibration	0	0%
D. Other Known Causes	4	0.47%
E. Unknown Causes	0	0%
F. Total (A + B + ...E)	4	² 0.47%

¹ [EE (hrs) or Downtime (hrs) / Total Operating Time] x 100

² If the total duration of excess emissions is 1% or greater, or the total CEMS downtime is 5% or greater then both this Unit Summary Report and the Complete Excess Emission Report shall be submitted. If both the total duration of excess emissions is less than 1% and the total CEMS downtime is less than 5%, then only this Unit Summary Report and the quarterly audit shall be submitted.

I certify that the information contained in this report is true, accurate, and complete.

Signature	Title	
	Energy Supply and Production Supervisor	
Printed/Typed Name Jerry Ahlsweide	Phone Number (incl. Area Code) (920) 686-4211	Date Signed <u>7-28-2014</u>

LEAVE BLANK - FOR DNR USE ONLY

Recommendation

DNR Reviewer _____

Date Reviewed _____

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities
Operating Day Criteria = 1 hours

Report Period: 04/01/2014 Through 04/30/2014

Source:

B9

Standard Limit:

0.15

Parameter:

B9CO#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
04/01/14	24	24	0.044	30	689	0.023
04/02/14	24	24	0.025	30	689	0.024
04/03/14	24	24	0.022	30	689	0.024
04/04/14	24	24	0.027	30	689	0.024
04/05/14	24	24	0.046	30	689	0.025
04/06/14	24	24	0.040	30	689	0.025
04/07/14	24	24	0.036	30	690	0.025
04/08/14	24	24	0.037	30	704	0.025
04/09/14	24	24	0.035	30	704	0.025
04/10/14	24	24	0.024	30	706	0.026
04/11/14	24	24	0.024	30	706	0.026
04/12/14	24	24	0.037	30	706	0.027
04/13/14	24	24	0.046	30	706	0.028
04/14/14	24	24	0.041	30	706	0.028
04/15/14	24	24	0.026	30	706	0.029
04/16/14	24	22	0.032	30	704	0.029
04/17/14	22	20	0.024	30	700	0.030
04/18/14	0	0	F	30	700	0.030 F
04/19/14	0	0	F	30	700	0.030 F
04/20/14	0	0	F	30	700	0.030 F
04/21/14	0	0	F	30	700	0.030 F
04/22/14	0	0	F	30	700	0.030 F
04/23/14	0	0	F	30	700	0.030 F
04/24/14	0	0	F	30	700	0.030 F
04/25/14	0	0	F	30	700	0.030 F
04/26/14	0	0	F	30	700	0.030 F
04/27/14	0	0	F	30	700	0.030 F
04/28/14	0	0	F	30	700	0.030 F
04/29/14	0	0	F	30	700	0.030 F
04/30/14	0	0	F	30	700	0.030 F

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 05/01/2014 Through 05/31/2014

Source: B9

Standard Limit:

0.15

Parameter: B9CO#M

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
05/01/14	0	0	F	30	700	0.030 F
05/02/14	0	0	F	30	700	0.030 F
05/03/14	0	0	F	30	700	0.030 F
05/04/14	0	0	F	30	700	0.030 F
05/05/14	0	0	F	30	700	0.030 F
05/06/14	0	0	F	30	700	0.030 F
05/07/14	0	0	F	30	700	0.030 F
05/08/14	0	0	F	30	700	0.030 F
05/09/14	0	0	F	30	700	0.030 F
05/10/14	0	0	F	30	700	0.030 F
05/11/14	0	0	F	30	700	0.030 F
05/12/14	0	0	F	30	700	0.030 F
05/13/14	0	0	F	30	700	0.030 F
05/14/14	0	0	F	30	700	0.030 F
05/15/14	0	0	F	30	700	0.030 F
05/16/14	0	0	F	30	700	0.030 F
05/17/14	0	0	F	30	700	0.030 F
05/18/14	0	0	F	30	700	0.030 F
05/19/14	0	0	F	30	700	0.030 F
05/20/14	0	0	F	30	700	0.030 F
05/21/14	0	0	F	30	700	0.030 F
05/22/14	0	0	F	30	700	0.030 F
05/23/14	0	0	F	30	700	0.030 F
05/24/14	0	0	F	30	700	0.030 F
05/25/14	0	0	F	30	700	0.030 F
05/26/14	17	17	0.027	30	694	0.031
05/27/14	24	24	0.016	30	698	0.031
05/28/14	24	24	0.024	30	699	0.031
05/29/14	24	24	0.026	30	700	0.031
05/30/14	24	24	0.028	30	700	0.031
05/31/14	24	24	0.030	30	700	0.032

F = Unit Offline

I = Invalid

E = Exceedance

30 Day Rolling Average Detail

Plant: Manitowoc Public Utilities

Operating Day Criteria = 1 hours

Report Period: 06/01/2014 Through 06/30/2014

Source: B9
Parameter: B9CO#M

Standard Limit: 0.15

Date	Daily			30 - Day		
	Operating Hours	Valid Hours	Average	Valid Days	Valid Hours	Average
06/01/14	24	24	0.029	30	700	0.031
06/02/14	24	24	0.029	30	700	0.031
06/03/14	23	23	0.028	30	699	0.031
06/04/14	0	0	F	30	699	0.031 F
06/05/14	0	0	F	30	699	0.031 F
06/06/14	0	0	F	30	699	0.031 F
06/07/14	0	0	F	30	699	0.031 F
06/08/14	0	0	F	30	699	0.031 F
06/09/14	0	0	F	30	699	0.031 F
06/10/14	0	0	F	30	699	0.031 F
06/11/14	0	0	F	30	699	0.031 F
06/12/14	0	0	F	30	699	0.031 F
06/13/14	0	0	F	30	699	0.031 F
06/14/14	0	0	F	30	699	0.031 F
06/15/14	0	0	F	30	699	0.031 F
06/16/14	21	21	0.032	30	696	0.032
06/17/14	24	24	0.018	30	696	0.031
06/18/14	24	24	0.016	30	698	0.031
06/19/14	24	24	0.027	30	703	0.030
06/20/14	23	23	0.033	30	702	0.030
06/21/14	0	0	F	30	702	0.030 F
06/22/14	0	0	F	30	702	0.030 F
06/23/14	0	0	F	30	702	0.030 F
06/24/14	0	0	F	30	702	0.030 F
06/25/14	0	0	F	30	702	0.030 F
06/26/14	18	18	0.034	30	696	0.030
06/27/14	24	24	0.022	30	696	0.030
06/28/14	24	24	0.035	30	696	0.030
06/29/14	24	24	0.045	30	696	0.030
06/30/14	24	24	0.041	30	696	0.030

F = Unit Offline

I = Invalid

E = Exceedance



MANITOWOC PUBLIC UTILITIES

1303 South 8th Street P.O. Box 1090 Manitowoc, WI 54221-1090 920-683-4600 FAX 920-686-4348 www.mpu.org

2nd Quarter 2014 Results Quarterly Audits Manitowoc Public Utilities Manitowoc, Wisconsin

Results of Calibration Error Test
Federal Register Part 60 Appendix B
Performance Specification 1
Continuous Emission Monitoring Systems
in Stationary Sources
at
Manitowoc Public Utilities
Manitowoc, Wisconsin



MANITOWOC PUBLIC UTILITIES

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S10 OPACITY Calibration Error Test Results:

Low Range - Allowed 3.0% Actual = 0.61%
Mid Range - Allowed 3.0% Actual = 0.50%
High Range - Allowed 3.0% Actual = 0.84%

S20 OPACITY Calibration Error Test Results:

Low Range - Allowed 3.0% Actual = 1.98%
Mid Range - Allowed 3.0% Actual = 1.64%
High Range - Allowed 3.0% Actual = 1.68%

BOILER #8/S20 CEMS Calibration Error Test Results:

ESC8832 Dilution Extractive System

Nox Low Range - Low Allowed 15%, Actual = 0.50%
Nox Low Range - Mid Allowed 15%, Actual = 0.50%
Nox High Range - Low Allowed 15%, Actual = 2.10%
Nox High Range - Mid Allowed 15%, Actual = 0.30%
So2 Low Range - Low Allowed 15%, Actual = 0.70%
So2 Low Range - Mid Allowed 15%, Actual = 0.30%
So2 High Range - Low Allowed 15%, Actual = 1.30%
So2 High Range - Mid Allowed 15%, Actual = 0.10%
Co2 - Low Range Allowed 15%, Actual = 0.60%
Co2 - Mid Range Allowed 15%, Actual = 0.90%
CO Low Range - Mid Allowed 15%, Actual = 0.30%
CO Low Range - High Allowed 15%, Actual = 1.10%
CO High Range - Mid Allowed 15%, Actual = 0.10%
CO High Range - High Allowed 15%, Actual = 0.10%

BOILER #9 CEMS Calibration Error Test Results:

ESC8832 Dilution Extractive System

Nox Low Range - Low Allowed 15%, Actual = 2.50%
Nox Low Range - Mid Allowed 15%, Actual = 0.80%
Nox High Range - Low Allowed 15%, Actual = 1.20%
Nox High Range - Mid Allowed 15%, Actual = 1.50%
So2 Low Range - Low Allowed 15%, Actual = 2.20%
So2 Low Range - Mid Allowed 15%, Actual = 2.80%
So2 High Range - Low Allowed 15%, Actual = 0.70%
So2 High Range - Mid Allowed 15%, Actual = 0.10%
Co2 - Low Range Allowed 15%, Actual = 2.40%
Co2 - Mid Range Allowed 15%, Actual = 0.30%
CO Low Range - Mid Allowed 15%, Actual = 1.90%
CO Low Range - High Allowed 15%, Actual = 1.10%
CO High Range - Mid Allowed 15%, Actual = 0.40%
CO High Range - High Allowed 15%, Actual = 1.90%



MANITOWOC PUBLIC UTILITIES

1303 South 8th Street P.O. Box 1090 Manitowoc, WI 54221-1090 920-683-4600 FAX 920-686-4348 www.mpu.org

Certification Sheet

Having supervised and worked on the test programs described in these reports, and having written these reports, I hereby certify the data, information, and results in these reports to be accurate and true according to the methods and procedures used. Data collected under the supervision of others is included in these reports and is presumed to have been gathered in accordance with recognized standards.

Timothy Harding
Timothy Harding
Control Instrument Technician (CIT)

Reviewed by:

Brian Fassbender
Brian Fassbender
Plant Environmental Contact (PEC)

Jerry Ahlsweide
Jerry Ahlsweide
Central Cems Contact (CCC)

Manitowoc Public Utilities

Summary of Results Federal Register Part 60 Appendix B Performance Specification 1 Continuous Emission Monitoring Systems in Stationary Sources

S-10 OPACITY - QUARTERLY CALIBRATION ERROR TEST

Person Conducting Test: Tim Harding

Affiliation: Manitowoc Public Utilities

Date: 6/20/2014

Monitor Path Length, L: 188"

System Output Path Length Corrected? Yes No OPLR = .38 TAPER RATIO = 0.766

Analyzer Mfr: United Science Inc.

Model/Serial No: 550 / S.N.5500035

Location: Manitowoc Public Utilities / S10

Emission Outlet Path Length L2: 144"

Calibrated Neutral Density Filter Values:

Actual Optical Density (% Opacity):

Low-Range	0.0783	16.5
Mid-Range	0.1314	26.1
High-Range	0.2631	45.4

Path Adjusted Optical Density (% Opacity):

Low-Range	12.9
Mid-Range	20.7
High-Range	37.1

Run Number	Calibration Filter Value	Instrument Reading	Arithmetic Difference		
			Low	Mid	High
(Path-Adjusted Percent Opacity)	(Opacity), Percent				
1 - Low	12.9	13.4	-0.50	--	--
2 - Mid	20.7	21.1	--	-0.42	--
3 - High	37.1	37.9	--	--	-0.81
4 - Low	12.9	13.4	-0.50	--	--
5 - Mid	20.7	21.2	--	-0.52	--
6 - High	37.1	37.9	--	--	-0.81
7 - Low	12.9	13.5	-0.60	--	--
8 - Mid	20.7	21.1	--	-0.42	--
9 - High	37.1	37.9	--	--	-0.81
10 - Low	12.9	13.4	-0.50	--	--
11 - Mid	20.7	21.1	--	-0.42	--
12 - High	37.1	37.9	--	--	-0.81
13 - Low	12.9	13.5	-0.60	--	--
14 - Mid	20.7	21.1	--	-0.42	--
15 - High	37.1	37.8	--	--	-0.71
Arithmetic Mean			X	-0.54	-0.44
Confidence Coefficient			CC	0.07	0.06
Calibration Error			X + CC	0.61	0.50
					0.84

Calibration Error Test Results:

Low Range - Allowed 3.0% Actual = 0.61%

Mid Range - Allowed 3.0% Actual = 0.50%

High Range - Allowed 3.0% Actual = 0.84%

Manitowoc Public Utilities

Summary of Results Federal Register Part 60 Appendix B Performance Specification 1 Continuous Emission Monitoring Systems in Stationary Sources

S-20 OPACITY - QUARTERLY CALIBRATION ERROR TEST

Person Conducting Test: Tim Harding

Analyzer Mfr: United Science Inc

Affiliation: MPU

Model/Serial No: 550 / S.N. 5500219

Date: 6/20/2014

Location: Manitowoc Public Utilities / S20

Monitor Path Length. L: 168"

Emission Outlet Path Length L2: 168"

System Output Path Length Corrected? Yes No X OPLR = .50 TAPER RATIO = 1.000

Calibrated Neutral Density Filter Values:

Actual Optical Density (% Opacity):

Low-Range	0.0783	16.5
Mid-Range	0.1314	26.1
High-Range	0.2631	45.4

Path Adjusted Optical Density (% Opacity):

Low-Range	16.5
Mid-Range	26.1
High-Range	45.4

Run Number	Calibration Filter Value	Instrument Reading	Arithmetic Difference		
			Low	Mid	High
(Path-Adjusted Percent Opacity)		(Opacity), Percent			
1 - Low	16.5	18.4	-1.90	--	--
2 - Mid	26.1	27.7	--	-1.60	--
3 - High	45.4	47.0	--	--	-1.60
4 - Low	16.5	18.4	-1.90	--	--
5 - Mid	26.1	27.7	--	-1.60	--
6 - High	45.4	47.0	--	--	-1.60
7 - Low	16.5	18.4	-1.90	--	--
8 - Mid	26.1	27.6	--	-1.50	--
9 - High	45.4	47.0	--	--	-1.60
10 - Low	16.5	18.4	-1.90	--	--
11 - Mid	26.1	27.7	--	-1.60	--
12 - High	45.4	47.0	--	--	-1.60
13 - Low	16.5	18.5	-2.00	--	--
14 - Mid	26.1	27.7	--	-1.60	--
15 - High	45.4	47.1	--	--	-1.70
Arithmetic Mean		X	-1.92	-1.58	-1.62
Confidence Coefficient		CC	0.06	0.06	0.06
Calibration Error		X + CC	1.98	1.64	1.68

Calibration Error Test Results:

Low Range - Allowed 3.0% Actual = 1.98%

Mid Range - Allowed 3.0% Actual = 1.64%

High Range - Allowed 3.0% Actual = 1.68%

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 06/19/2014 00:00 Through 06/19/2014 23:59

Source: B9
Parameter: B9PNOXLO
System ID: X05
Component ID: P03
Span Value: 200.000
Span Scale Code: L

Test End Date/Time: 06/19/14 10:30
Test Number: XML (P03-Q2-2014-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 52.000 Measured Mean: 50.700 Level Error: 2.5 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX22556 Cylinder Exp. Date: 04/04/2022
Low-Level					
06/19/14 08:14	52.000	51.400	0.600	1.2	
06/19/14 09:11	52.000	50.500	1.500	2.9	
06/19/14 10:16	52.000	50.200	1.800	3.5	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 114.000 Measured Mean: 114.900 Level Error: 0.8 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: F22011 Cylinder #: CC258060 Cylinder Exp. Date: 07/21/2021
Mid-Level					
06/19/14 08:21	114.000	114.500	-0.500	0.4	
06/19/14 09:18	114.000	115.500	-1.500	1.3	
06/19/14 10:23	114.000	114.700	-0.700	0.6	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 183.000 Measured Mean: 186.733 Level Error: 2.0 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: F22011 Cylinder #: CC145332 Cylinder Exp. Date: 07/09/2021
High-Level					
06/19/14 08:28	183.000	185.500	-2.500	1.4	
06/19/14 09:25	183.000	186.800	-3.800	2.1	
06/19/14 10:30	183.000	187.900	-4.900	2.7	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 06/19/2014 00:00 Through 06/19/2014 23:59

Source: B9
Parameter: B9PNOXHI
System ID: X05
Component ID: P03
Span Value: 500.000
Span Scale Code: H

Test End Date/Time: 06/19/14 13:06
Test Number: XML (P03-Q2-2014-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 126.200 Measured Mean: 127.667 Level Error: 1.2 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX49709 Cylinder Exp. Date: 07/05/2014
Low-Level					
06/19/14 11:10	126.200	127.700	-1.500	1.2	
06/19/14 11:53	126.200	127.400	-1.200	1.0	
06/19/14 12:54	126.200	127.900	-1.700	1.3	

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 274.000 Measured Mean: 278.133 Level Error: 1.5 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX53457 Cylinder Exp. Date: 11/29/2014
Mid-Level					
06/19/14 11:16	274.000	277.100	-3.100	1.1	
06/19/14 11:59	274.000	279.600	-5.600	2.0	
06/19/14 13:00	274.000	277.700	-3.700	1.4	

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 458.900 Measured Mean: 462.600 Level Error: 0.8 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX54998 Cylinder Exp. Date: 11/26/2014
High-Level					
06/19/14 11:22	458.900	457.900	1.000	0.2	
06/19/14 12:05	458.900	460.000	-1.100	0.2	
06/19/14 13:06	458.900	469.900	-11.000	2.4	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 06/19/2014 00:00 Through 06/19/2014 23:59

Source: B9
Parameter: B9PSO2LO
System ID:
Component ID: P01
Span Value: 400.000
Span Scale Code: L

Test End Date/Time: 06/19/14 10:30
Test Number: XML (P01-Q2-2014-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference
Low-Level				
06/19/14 08:14	96.700	99.700	-3.000	3.1
06/19/14 09:11	96.700	98.500	-1.800	1.9
06/19/14 10:16	96.700	98.400	-1.700	1.8

Reference Mean: 96.700
Measured Mean: 98.867
Level Error: 2.2
APS Indicator: False
Gas Type Code: BALN,CO,NO,SO2
Vendor Identifier: D42012
Cylinder #: SX22556
Cylinder Exp. Date: 04/04/2022

Injection Time	Reference Value	Measured Value	Difference	% of Reference
Mid-Level				
06/19/14 08:21	224.000	230.800	-6.800	3.0
06/19/14 09:18	224.000	230.700	-6.700	3.0
06/19/14 10:23	224.000	229.500	-5.500	2.5

Reference Mean: 224.000
Measured Mean: 230.333
Level Error: 2.8
APS Indicator: False
Gas Type Code: BALN,CO,NO,SO2
Vendor Identifier: F22011
Cylinder #: CC258060
Cylinder Exp. Date: 07/21/2021

Injection Time	Reference Value	Measured Value	Difference	% of Reference
High-Level				
06/19/14 08:28	364.000	370.200	-6.200	1.7
06/19/14 09:25	364.000	373.600	-9.600	2.6
06/19/14 10:30	364.000	372.300	-8.300	2.3

Reference Mean: 364.000
Measured Mean: 372.033
Level Error: 2.2
APS Indicator: False
Gas Type Code: BALN,CO,NO,SO2
Vendor Identifier: F22011
Cylinder #: CC145332
Cylinder Exp. Date: 07/09/2021

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 06/19/2014 00:00 Through 06/19/2014 23:59

Source: B9
Parameter: B9PSO2HI
System ID:
Component ID: P01
Span Value: 4,000.000
Span Scale Code: H

Test End Date/Time: 06/19/14 13:06
Test Number: XML (P01-Q2-2014-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
Low-Level					
06/19/14 11:10	1006.000	1016.400	-10.400	1.0	Reference Mean: 1,006.000 Measured Mean: 1,012.933 Level Error: 0.7 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX49709 Cylinder Exp. Date: 07/05/2014
06/19/14 11:53	1006.000	1014.800	-8.800	0.9	
06/19/14 12:54	1006.000	1007.600	-1.600	0.2	

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
Mid-Level					
06/19/14 11:16	2257.000	2273.400	-16.400	0.7	Reference Mean: 2,257.000 Measured Mean: 2,259.800 Level Error: 0.1 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX53457 Cylinder Exp. Date: 11/29/2014
06/19/14 11:59	2257.000	2249.900	7.100	0.3	
06/19/14 13:00	2257.000	2256.100	0.900	0.0	

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
High-Level					
06/19/14 11:22	3580.700	3634.000	-53.300	1.5	Reference Mean: 3,580.700 Measured Mean: 3,604.267 Level Error: 0.7 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX54998 Cylinder Exp. Date: 11/26/2014
06/19/14 12:05	3580.700	3584.900	-4.200	0.1	
06/19/14 13:06	3580.700	3593.900	-13.200	0.4	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 06/19/2014 00:00 Through 06/19/2014 23:59

Source: B9
Parameter: B9CPCO2
System ID: X09
Component ID: P04
Span Value: 20.000
Span Scale Code: H

Test End Date/Time: 06/19/14 13:06
Test Number: XML (P04-Q2-2014-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 5.600 Measured Mean: 5.467 Level Error: 2.4 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX49709 Cylinder Exp. Date: 07/05/2014
Low-Level					
06/19/14 11:10	5.600	5.600	0.000	0.0	
06/19/14 11:53	5.600	5.200	0.400	7.1	
06/19/14 12:54	5.600	5.600	0.000	0.0	

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 11.000 Measured Mean: 11.033 Level Error: 0.3 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX53457 Cylinder Exp. Date: 11/29/2014
Mid-Level					
06/19/14 11:16	11.000	11.100	-0.100	0.9	
06/19/14 11:59	11.000	11.000	0.000	0.0	
06/19/14 13:00	11.000	11.000	0.000	0.0	

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 17.700 Measured Mean: 17.867 Level Error: 0.9 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX54998 Cylinder Exp. Date: 11/26/2014
High-Level					
06/19/14 11:22	17.700	17.700	0.000	0.0	
06/19/14 12:05	17.700	17.800	-0.100	0.6	
06/19/14 13:06	17.700	18.100	-0.400	2.3	

Cylinder Gas Audit

Plant: Manitowoc Public Utilities

Report Period: 04/01/2014 00:00 Through 06/20/2014 23:59

Source: B9

Parameter: B9PCOLO

Instrument Span: 100.000

Test Date/Time: 06/19/14 10:30

Test Result: Pass

Aborted?: No

Time	CEMS Value	Audit Value	Difference	% of Audit Value	
Low-Level					
06/19/14 08:14	25.4002	4.900	0.500	2.0	CEMS Mean (Cm): 25.067
06/19/14 09:11	24.8002	4.900	-0.100	-0.4	Audit Mean (Ca): 24.900
06/19/14 10:16	25.0002	4.900	0.100	0.4	Accuracy (A) in %: 0.7
					Mean Difference: 0.2
					APS Indicator: 0
					Cylinder #: SX22556
					Cylinder Exp. Date: 04/04/2022

Time	CEMS Value	Audit Value	Difference	% of Audit Value	
Mid-Level					
06/19/14 08:21	54.3005	5.100	-0.800	-1.5	CEMS Mean (Cm): 54.067
06/19/14 09:18	55.1005	5.100	0.000	0.0	Audit Mean (Ca): 55.100
06/19/14 10:23	52.8005	5.100	-2.300	-4.2	Accuracy (A) in %: -1.9
					Mean Difference: -1.0
					APS Indicator: 0
					Cylinder #: CC258060
					Cylinder Exp. Date: 07/21/2021

Time	CEMS Value	Audit Value	Difference	% of Audit Value	
High-Level					
06/19/14 08:28	89.6009	0.700	-1.100	-1.2	CEMS Mean (Cm): 91.733
06/19/14 09:25	88.8009	0.700	-1.900	-2.1	Audit Mean (Ca): 90.700
06/19/14 10:30	96.8009	0.700	6.100	6.7	Accuracy (A) in %: 1.1
					Mean Difference: 1.0
					APS Indicator: 0
					Cylinder #: CC145332
					Cylinder Exp. Date: 07/09/2021

Cylinder Gas Audit

Plant: Manitowoc Public Utilities

Report Period: 04/01/2014 00:00 Through 06/20/2014 23:59

Source: B9

Parameter: B9PCOHI

Instrument Span: 5000.000

Test Date/Time: 06/19/14 13:06

Test Result: Pass

Aborted?: No

Time	CEMS Value	Audit Value	Difference	% of Audit Value	CEMS Mean (Cm): 1232.300 Audit Mean (Ca): 1280.000 Accuracy (A) in %: -3.7 Mean Difference: -47.7 APS Indicator: 0 Cylinder #: SX49709 Cylinder Exp. Date: 07/05/2014
Low-Level					
06/19/14 11:10	1,258.600	1,280.000	-21.400	-1.7	
06/19/14 11:53	1,217.300	1,280.000	-62.700	-4.9	
06/19/14 12:54	1,221.000	1,280.000	-59.000	-4.6	
Time	CEMS Value	Audit Value	Difference	% of Audit Value	CEMS Mean (Cm): 2777.667 Audit Mean (Ca): 2767.600 Accuracy (A) in %: 0.4 Mean Difference: 10.1 APS Indicator: 0 Cylinder #: SX53457 Cylinder Exp. Date: 11/29/2014
Mid-Level					
06/19/14 11:16	2,792.700	2,767.600	25.100	0.9	
06/19/14 11:59	2,771.500	2,767.600	3.900	0.1	
06/19/14 13:00	2,768.800	2,767.600	1.200	0.0	
Time	CEMS Value	Audit Value	Difference	% of Audit Value	CEMS Mean (Cm): 4618.733 Audit Mean (Ca): 4533.800 Accuracy (A) in %: 1.9 Mean Difference: 84.9 APS Indicator: 0 Cylinder #: SX54998 Cylinder Exp. Date: 11/26/2014
High-Level					
06/19/14 11:22	4,545.600	4,533.800	11.800	0.3	
06/19/14 12:05	4,620.500	4,533.800	86.700	1.9	
06/19/14 13:06	4,690.100	4,533.800	156.300	3.4	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 04/01/2014 00:00 Through 06/20/2014 23:59

Source: S20
Parameter: S20NOXLO
System ID: X05
Component ID: P06
Span Value: 200.000
Span Scale Code: L

Test End Date/Time: 06/04/14 08:43
Test Number: XML (P06-Q2-2014-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 51.700	Measured Mean: 51.933	Level Error: 0.5
Low-Level							
06/04/14 07:39	51.700	52.100	-0.400	0.8	APS Indicator: False		
06/04/14 08:07	51.700	51.900	-0.200	0.4	Gas Type Code: BALN,CO,NO,SO2		
06/04/14 08:33	51.700	51.800	-0.100	0.2	Vendor Identifier: F12011		
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 108.300	Measured Mean: 108.833	Level Error: 0.5
Mid-Level							
06/04/14 07:44	108.300	109.000	-0.700	0.6	APS Indicator: False		
06/04/14 08:12	108.300	108.800	-0.500	0.5	Gas Type Code: BALN,CO,NO,SO2		
06/04/14 08:38	108.300	108.700	-0.400	0.4	Vendor Identifier: D42012		
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 176.100	Measured Mean: 177.067	Level Error: 0.5
High-Level							
06/04/14 07:49	176.100	177.500	-1.400	0.8	APS Indicator: False		
06/04/14 08:17	176.100	176.900	-0.800	0.5	Gas Type Code: BALN,CO,NO,SO2		
06/04/14 08:43	176.100	176.800	-0.700	0.4	Vendor Identifier: D42012		

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 04/01/2014 00:00 Through 06/30/2014 23:59

Source: S20
Parameter: S20NOXHI
System ID: X05
Component ID: P06
Span Value: 500.000
Span Scale Code: H

Test End Date/Time: 06/04/14 10:50
Test Number: XML (P06-Q2-2014-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 119.000	Measured Mean: 121.467	Level Error: 2.1
Low-Level							
06/04/14 09:47	119.000	121.700	-2.700	2.3			APS Indicator: False
06/04/14 10:14	119.000	121.300	-2.300	1.9			Gas Type Code: BALN,CO,CO2,NO,SO2
06/04/14 10:40	119.000	121.400	-2.400	2.0			Vendor Identifier: F12011
							Cylinder #: CC101486
							Cylinder Exp. Date: 10/25/2014
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 284.000	Measured Mean: 284.867	Level Error: 0.3
Mid-Level							
06/04/14 09:52	284.000	285.100	-1.100	0.4			APS Indicator: False
06/04/14 10:19	284.000	284.900	-0.900	0.3			Gas Type Code: BALN,CO,CO2,NO,SO2
06/04/14 10:45	284.000	284.600	-0.600	0.2			Vendor Identifier: F12011
							Cylinder #: CC137454
							Cylinder Exp. Date: 07/17/2021
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 453.000	Measured Mean: 453.467	Level Error: 0.1
High-Level							
06/04/14 09:57	453.000	453.700	-0.700	0.2			APS Indicator: False
06/04/14 10:24	453.000	453.900	-0.900	0.2			Gas Type Code: BALN,CO,CO2,NO,SO2
06/04/14 10:50	453.000	452.800	0.200	0.0			Vendor Identifier: F12011
							Cylinder #: CC350583
							Cylinder Exp. Date: 09/07/2014

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 04/01/2014 00:00 Through 06/20/2014 23:59

Source: S20
Parameter: S20SO2LO
System ID:
Component ID: P05
Span Value: 400.000
Span Scale Code: L

Test End Date/Time: 06/04/14 08:43
Test Number: XML (P05-Q2-2014-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 100.900 Measured Mean: 100.233 Level Error: 0.7 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: F12011 Cylinder #: CC238857 Cylinder Exp. Date: 09/17/2014
Low-Level					
06/04/14 07:39	100.900	100.800	0.100	0.1	
06/04/14 08:07	100.900	99.900	1.000	1.0	
06/04/14 08:33	100.900	100.000	0.900	0.9	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 222.700 Measured Mean: 223.433 Level Error: 0.3 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX55806 Cylinder Exp. Date: 07/24/2021
Mid-Level					
06/04/14 07:44	222.700	223.800	-1.100	0.5	
06/04/14 08:12	222.700	222.800	-0.100	0.0	
06/04/14 08:38	222.700	223.700	-1.000	0.4	
Injection Time	Reference Value	Measured Value	Difference	% of Reference	Reference Mean: 361.500 Measured Mean: 366.667 Level Error: 1.4 APS Indicator: False Gas Type Code: BALN,CO,NO,SO2 Vendor Identifier: D42012 Cylinder #: SX52720 Cylinder Exp. Date: 07/24/2021
High-Level					
06/04/14 07:49	361.500	366.500	-5.000	1.4	
06/04/14 08:17	361.500	365.800	-4.300	1.2	
06/04/14 08:43	361.500	367.700	-6.200	1.7	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 04/01/2014 00:00 Through 06/30/2014 23:59

Source: S20
Parameter: S20SO2HI
System ID:
Component ID: P05
Span Value: 4,000.000
Span Scale Code: H

Test End Date/Time: 06/04/14 10:50
Test Number: XML (P05-Q2-2014-2) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
Low-Level					
06/04/14 09:47	1011.000	1026.800	-15.800	1.6	Reference Mean: 1,011.000 Measured Mean: 1,023.900 Level Error: 1.3 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: F12011 Cylinder #: CC101486 Cylinder Exp. Date: 10/25/2014
06/04/14 10:14	1011.000	1019.700	-8.700	0.9	
06/04/14 10:40	1011.000	1025.200	-14.200	1.4	

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
Mid-Level					
06/04/14 09:52	2200.000	2200.900	-0.900	0.0	Reference Mean: 2,200.000 Measured Mean: 2,203.233 Level Error: 0.1 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: F12011 Cylinder #: CC137454 Cylinder Exp. Date: 07/17/2021
06/04/14 10:19	2200.000	2199.400	0.600	0.0	
06/04/14 10:45	2200.000	2209.400	-9.400	0.4	

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
High-Level					
06/04/14 09:57	3494.000	3498.500	-4.500	0.1	Reference Mean: 3,494.000 Measured Mean: 3,503.167 Level Error: 0.3 APS Indicator: False Gas Type Code: BALN,CO,CO2,NO,SO2 Vendor Identifier: F12011 Cylinder #: CC350583 Cylinder Exp. Date: 09/07/2014
06/04/14 10:24	3494.000	3498.500	-4.500	0.1	
06/04/14 10:50	3494.000	3512.500	-18.500	0.5	

Linearity Test

Plant: Manitowoc Public Utilities

Report Period: 04/01/2014 00:00 Through 06/20/2014 23:59

Source: S20
Parameter: S20CPCO2
System ID: X09
Component ID: P04
Span Value: 20.000
Span Scale Code: H

Test End Date/Time: 06/04/14 10:50
Test Number: XML (P04-Q2-2014-1) / EDR (1)
Reason for Test: Periodic Quality Assurance
Test Result: Pass
Abbreviated?: No

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
Low-Level					
06/04/14 09:47	5.600	5.700	-0.100	1.8	
06/04/14 10:14	5.600	5.600	0.000	0.0	
06/04/14 10:40	5.600	5.600	0.000	0.0	

Reference Mean: 5.600
 Measured Mean: 5.633
 Level Error: 0.6
 APS Indicator: False
 Gas Type Code: BALN,CO,CO2,NO,SO2
 Vendor Identifier: F12011
 Cylinder #: CC101486
 Cylinder Exp. Date: 10/25/2014

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
Mid-Level					
06/04/14 09:52	10.700	10.800	-0.100	0.9	
06/04/14 10:19	10.700	10.800	-0.100	0.9	
06/04/14 10:45	10.700	10.800	-0.100	0.9	

Reference Mean: 10.700
 Measured Mean: 10.800
 Level Error: 0.9
 APS Indicator: False
 Gas Type Code: BALN,CO,CO2,NO,SO2
 Vendor Identifier: F12011
 Cylinder #: CC137454
 Cylinder Exp. Date: 07/17/2021

Injection Time	Reference Value	Measured Value	Difference	% of Reference	
High-Level					
06/04/14 09:57	18.100	18.200	-0.100	0.6	
06/04/14 10:24	18.100	18.200	-0.100	0.6	
06/04/14 10:50	18.100	18.200	-0.100	0.6	

Reference Mean: 18.100
 Measured Mean: 18.200
 Level Error: 0.6
 APS Indicator: False
 Gas Type Code: BALN,CO,CO2,NO,SO2
 Vendor Identifier: F12011
 Cylinder #: CC350583
 Cylinder Exp. Date: 09/07/2014

Cylinder Gas Audit

Plant: Manitowoc Public Utilities

Report Period: 04/01/2014 00:00 Through 06/20/2014 23:59

Source: S20
Parameter: S20PCOLO
Instrument Span: 100.000

Test Date/Time: 06/04/14 08:43
Test Result: Pass
Aborted?: No

Time	CEMS Value	Audit Value	Difference	% of Audit Value	CEMS Mean (Cm): 24.200 Audit Mean (Ca): 25.100 Accuracy (A) in %: -3.6 Mean Difference: -0.9 APS Indicator: 0 Cylinder #: CC238857 Cylinder Exp. Date: 09/17/2014
Low-Level					
06/04/14 07:39	24.8002	5.100	-0.300	-1.2	
06/04/14 08:07	23.0002	5.100	-2.100	-8.4	
06/04/14 08:33	24.8002	5.100	-0.300	-1.2	
Time	CEMS Value	Audit Value	Difference	% of Audit Value	CEMS Mean (Cm): 55.067 Audit Mean (Ca): 54.900 Accuracy (A) in %: 0.3 Mean Difference: 0.2 APS Indicator: 0 Cylinder #: SX55806 Cylinder Exp. Date: 07/24/2021
Mid-Level					
06/04/14 07:44	56.1005	4.900	1.200	2.2	
06/04/14 08:12	54.2005	4.900	-0.700	-1.3	
06/04/14 08:38	54.9005	4.900	0.000	0.0	
Time	CEMS Value	Audit Value	Difference	% of Audit Value	CEMS Mean (Cm): 90.367 Audit Mean (Ca): 91.400 Accuracy (A) in %: -1.1 Mean Difference: -1.0 APS Indicator: 0 Cylinder #: SX52720 Cylinder Exp. Date: 07/24/2021
High-Level					
06/04/14 07:49	91.0009	1.400	-0.400	-0.4	
06/04/14 08:17	89.3009	1.400	-2.100	-2.3	
06/04/14 08:43	90.8009	1.400	-0.600	-0.7	

Cylinder Gas Audit
 Plant: Manitowoc Public Utilities
 Report Period: 04/01/2014 00:00 Through 06/20/2014 23:59

Source: S20
Parameter: S20PCOHI
Instrument Span: 5000.000

Test Date/Time: 06/04/14 10:50
Test Result: Pass
Aborted?: No

Time	CEMS Value	Audit Value	Difference	% of Audit Value	
Low-Level					
06/04/14 09:47	1,259.400	1,259.000	0.400	0.0	CEMS Mean (Cm): 1255.733
06/04/14 10:14	1,254.300	1,259.000	-4.700	-0.4	Audit Mean (Ca): 1259.000
06/04/14 10:40	1,253.500	1,259.000	-5.500	-0.4	Accuracy (A) in %: -0.3
					Mean Difference: -3.3
					APS Indicator: 0
					Cylinder #: CC101486
					Cylinder Exp. Date: 10/25/2014
Mid-Level					
Time	CEMS Value	Audit Value	Difference	% of Audit Value	CEMS Mean (Cm): 2699.900
06/04/14 09:52	2,701.200	2,700.000	1.200	0.0	Audit Mean (Ca): 2700.000
06/04/14 10:19	2,702.100	2,700.000	2.100	0.1	Accuracy (A) in %: 0.0
06/04/14 10:45	2,696.400	2,700.000	-3.600	-0.1	Mean Difference: -0.1
					APS Indicator: 0
					Cylinder #: CC137454
					Cylinder Exp. Date: 07/17/2021
High-Level					
Time	CEMS Value	Audit Value	Difference	% of Audit Value	CEMS Mean (Cm): 4363.733
06/04/14 09:57	4,362.900	4,369.000	-6.100	-0.1	Audit Mean (Ca): 4369.000
06/04/14 10:24	4,370.000	4,369.000	1.000	0.0	Accuracy (A) in %: -0.1
06/04/14 10:50	4,358.300	4,369.000	-10.700	-0.2	Mean Difference: -5.3
					APS Indicator: 0
					Cylinder #: CC350583
					Cylinder Exp. Date: 09/07/2014